

Amendments to the claims

This listing of claims will replace all prior versions and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An improved electrolyte and anode for the electrolysis of alumina (Al_2O_3), the electrolyte comprising a mixture of aluminum fluoride (AlF_3) and potassium fluoride (KF), and NaF comprises no more than 2 weight percent of the electrolyte, the anode comprises aluminum-bronze, and the anode contacts the electrolyte.

2. (Currently Amended) The electrolyte recited in claim 1 wherein the potassium fluoride (KF) to aluminum fluoride (AlF_3) molar ratio ranges from about 1.0 to 1.5.

3. (Currently Amended) The electrolyte anode recited in claim 1, the electrolyte further comprising wherein the anode comprises from 1 weight percent to 20 weight percent aluminum.
from about 4 to 6 wt. % of aluminum oxide (alumina/ Al_2O_3).

4. (Currently Amended) The electrolyte as recited in claim 1 wherein the concentrations of the electrolyte components remain relatively constant between 600 °C and 1000 °C. during hydrolysis

5. (Cancel)

6. (Currently Amended) The electrolyte as recited in claim 3 wherein the electrolyte remains is a liquid between 600 and 1000 °C. during electrolysis.

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Claims 7-20 (Canceled)

21. (New) An electrolyte-anode combination for use in aluminum electrolysis, the combination comprising:
- a) an electrolyte comprising aluminum fluoride and potassium fluoride having a weight percent of less than 2 percent of NaF; and
 - b) an anode comprised of aluminum-bronze, wherein the anode contacts the electrolyte.
22. (New) The combination as recited in claim 21 wherein the electrolyte comprises aluminum fluoride, potassium fluoride, and contains dissolved alumina.
23. (New) The combination as recited in claim 21 wherein the anode is further comprised of from 1 weight percent to 20 weight percent aluminum.
24. (New) The combination as recited in claim 21 wherein an oxide film overlays the anode.
25. (New) The combination as recited in claim 21 wherein the anode has a polarization voltage of less than 0.5 volts at a current surface density of 0.8 amperes per square centimeter.
26. (New) The combination as recited in claim 24 wherein the film overlays the anode at a temperature of 660 °C.

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